We claim:

1. A method of controlling an optical beam path, the method including:
    a) directing an incident beam to strike a grating at a predetermined angle(?) with respect to the grating to diffract the incident beam;
    b) placing a lens perpendicular in the path of the diffracted beam;
    c) placing a scanner mirror in the diffracted beam path such that the lens focuses the diffracted beam on the scanner mirror such that the beam arrives perpendicular to the scanner mirror surface;
    d) commencing scanning of the scanner mirror over a predetermined range of angles such that the beam is reflected from the scanner mirror through the lens and diffracted from the grating back along a direction parallel to the original incident beam;
    e) placing a bounced mirror in the path of the beam diffracted from the grating when the scanner mirror is at a predetermined range of angles; and
    f) retro-reflecting the beam from the bounced mirror such that the beam retraces its path back through the system in a reciprocal manner, and finally exits from the system along the path it entered.

2. The method of Claim 1, wherein the grating has a blaze selected to enhance optical efficiency.

3. The method of Claim 1, wherein the grating is designed for the particular electromagnetic frequencies of operation.

4. The method of Claim 1, wherein the structure of the grating is selected based on the requirement of the time delay.

5. The method of Claim 4, wherein the structure includes a physical dimension in mm and a critical dimension in line/mm.

6. The method of Claim 1, wherein the wavelength λ of the incident wave is known, and the angle of incident is selected to force the beam to have a maximum diffracted power in "-1 order".

7. The method of Claim 1, wherein the lens has a focal length of F and is placed at a distance F from the grating.

8. The method of Claim 1, wherein the lens is a simple achromatic lens.

9. The method of Claim 1, wherein the lens is a quasi optics focusing and collimating system based on an electro magnetic domain of operation.

10. The method of Claim 1, wherein the optical components and associated controls comprise a micro-opto-electro-mechanical systems (MOEMS) optical scanner.

11. A Micro-opto-electro-mechanical systems (MOEMS), including:
    a) a grating;
    b) a lens having a focal length of F and placed at a distance F from the grating;
    c) a scanner mirror placed at a distance F from the lens and placed such that an incident wave traversing an incident path will be diffracted by the grating and directed through the lens to strike the scanner mirror, the scanner mirror capable of being controlled over a range of scanning angles; and
    d) a bounced mirror placed in a path parallel to an incident beam path;

    wherein the scanner mirror is controllable to direct the diffracted beam to the scanner mirror to strike the bounced mirror retro-reflecting the beam from the bounced mirror such that the beam retraces its path back through the system in a reciprocal manner, finally exiting from the system along the path it entered.

12. The MOEMS of Claim 11, wherein the grating has a blaze selected to enhance optical efficiency.

13. The MOEMS of Claim 11, wherein the grating is designed for the particular electromagnetic frequencies of operation.

14. The MOEMS of Claim 11, wherein the structure of the grating is selected based on the requirement of the time delay.

15. The MOEMS of Claim 14, wherein the structure of the grating includes a physical dimension in mm and a critical dimension in line/mm.

16. The MOEMS of Claim 11, wherein the wavelength λ of the incident wave is known, and the angle of incident is selected to force the beam to have a maximum diffracted power in "-1 order" and strikes perpendicular on the focusing lens and scanner mirror.

17. The MOEMS of Claim 11, wherein the lens has a focal length of F and is placed at a distance F from the grating.

18. The MOEMS of Claim 11, wherein the lens is a simple achromatic lens.

19. The MOEMS of Claim 11, wherein the lens is a quasi optics focusing and collimating system based on an electro magnetic domain of operation.

20. The MOEMS of Claim 11, wherein the optical components and associated controls comprise a micro-opto-electro-mechanical system (MOEMS) optical scanner.

21. The MOEMS of Claim 11, wherein the scanner is based on a thermal actuator to produce an IC-based integrated scanner mirror (ISM).